
MOTIVATIONS, ATTITUDES, PREFERENCES, AND SATISFACTIONS AMONG OUTDOOR RECREATIONISTS

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INTRODUCTION

This chapter is presented in two sections. The first by Bright and Tarrant describes visitor preferences and examines users' perceptions of encountering other visitors in outdoor recreation settings. The second by Tarrant and others reviews visitor preferences for, and satisfactions with, outdoor recreation experiences.

Outdoor recreation experiences are investigated by means of an in-depth review of the published literature since 1986, focusing upon (1) measurement and application of the Recreation Experience Preference (REP) scales developed to measure user motives for outdoor recreation involvement, and (2) user attitudes toward social encounter levels. Encounter levels were examined because of the vast amount of literature in the past 10 years devoted to determining recreation use carrying capacities. The second part of the chapter is an analysis and summary of data from the Customer Use and Survey Techniques for Operations, Management, Evaluation, and Research (CUSTOMER) study, which resulted in interviews of over 11,000 visitors to 31 outdoor recreation sites across the country between 1990 to 1994. Using the framework of importance and performance, this section explores visitor preferences for, and satisfactions with, site attributes for six types of outdoor recreation settings (general, developed, dispersed, water, roaded, and winter).

RECREATION VISITOR EXPERIENCE PREFERENCES AND ATTITUDES

(By Alan D. Bright, Washington State University, Pullman, WA, and Michael A. Tarrant,
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Outdoor recreation has become a defining aspect of U.S. society. To a large extent, the connection many Americans feel to the "Great Outdoors" is an underlying theme of our culture. Such a kinship exists for the individual who actively enjoys the outdoors by venturing into a wilderness area every weekend, as well as one who enjoys and values nature without directly experiencing any aspect of it. The increase in outdoor recreation participation continues as it was during the post-World War II years. For the most part, increases in many activities mirror the slowing rate of population increase (Cordell, Bergstrom, Hartmann, & English, 1990). In addition to the increase in demand for outdoor recreation experiences, there is potential for other highly

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significant changes in outdoor recreation. Cordell et al. (1990) suggested that factors such as an aging population, a decline in leisure time, geographically uneven population growth, increasing immigration, changes in family structures, and increasing levels of education, among other factors, have significantly changed the way Americans recreate in the outdoors. Examples include (a) a change in the nature of vacations with a trend toward shorter, more frequent excursions, (b) an increasing diversity of participation patterns across groups, (c) a resurgence in wilderness recreation visits, (d) a growth in non-recreational values of wilderness such as scenic, scientific, educational, conservation, and historical, and (e) an increase in more passive activities appropriate for an aging population. Such significant change in the way Americans recreate in the outdoors holds significant implications for not only the public, but also for recreation professionals. According to McLellan and Siehl (1988), "recreation managers, researchers, and policymakers will find need to cope with rapid change; recreation resource concerns increasingly will be people issues and not resource issues alone."

The growing complexity of society coupled with the change in outdoor recreation participation have resulted in a greater emergence of social-psychological research aimed at understanding outdoor recreation behavior and exploring factors that underlie such behavior. These factors include reasons why people participate in outdoor recreation as well as how individuals evaluate various aspects of an outdoor recreation experience.

The first section of this chapter discusses what is currently known about experiences the public is looking for in outdoor recreation and public perceptions related to recreation in outdoor settings. Since these are very broad areas of research, we focus on two specific objectives. First, we examine the reasons why people participate in outdoor recreation, that is, their motivations for participation. Second, we examine attitudes toward, or evaluations of encounters with, other people while recreating in the outdoors.

Motivations for Participating in Outdoor Recreation

Recreation researchers have long been interested in understanding why people participate in outdoor recreation. While it once appeared evident that an angler fishes to catch fish and a hunter hunts to "bag" game, it is clear that outdoor recreation motivations are, in reality, much more complex.

The Meaning of Motivation

While research on the motives behind outdoor recreation participation has been going on for several years, definitions of motivation have varied. Stankey and Schreyer (1987) considered motives to be a predisposition to fulfill specific types of needs. Reasons for participating in outdoor recreation have also been called recreation experience preferences (REP) (Driver 1976), emphasizing the voluntary nature of behavior based on those preferences. That is, we engage in specific recreation behavior because we desire outcomes that we perceive will occur as a result of that behavior. Focusing on these outcomes, motivations have been referred to as desired psychological outcomes (Driver & Brown, 1978) and desired consequences (Driver & Knopf, 1976). The meaning of motivations has also focused on the user's expectation that he or she will encounter desirable conditions, or experience expectations (Schreyer & Roggenbuck, 1978). The importance of studying motivations for outdoor recreation lies in their potential to influence satisfaction through meeting individual's needs, preferences, expectations, and/or desired outcomes.

Early Research on Motivations for Outdoor Recreation

The search for motivations for outdoor recreation was abundant during the 1960s, but it was generally limited to a description of participation in specific activities, such as hunting, fishing, camping, or canoeing. A conceptual foundation for explaining why people recreate in the outdoors was lacking. While a number of researchers began to explore the theoretical nature of motivations during the 1960s and 1970s (e.g., Burch, 1969 & Hendee, 1974), the most comprehensive study of motivations for outdoor recreation was by Driver and his associates. In their approach, recreation was perceived not as an activity, but as an experience derived from recreational engagements (Driver & Tocher, 1970). Such an "experiential approach" suggests that people participate in outdoor recreation in order to realize any number of psychological outcomes. Research in this area was primarily interested in understanding how basic motivations, or psychological outcomes, influence the choices people make about what activities they participate in and what settings they prefer. Results would aid managers in identifying the "product" recreationists desire, and enable them to take steps to provide that product.

This research developed psychometric scales that could be used to measure the dimensions of people's recreation experience. These measurements have become known as the recreation experience preference

(REP) scales (Driver, 1977). The assumption in using these scales is that several scale items correlate to provide information about a broader experience preference domain. For example, obtaining information about the extent to which an individual values an *escape from physical pressure* in outdoor recreation activities requires determining the importance of several correlated items designed to measure needs for (a) tranquility, (b) privacy, (c) escaping crowds, and (d) escaping physical stress.

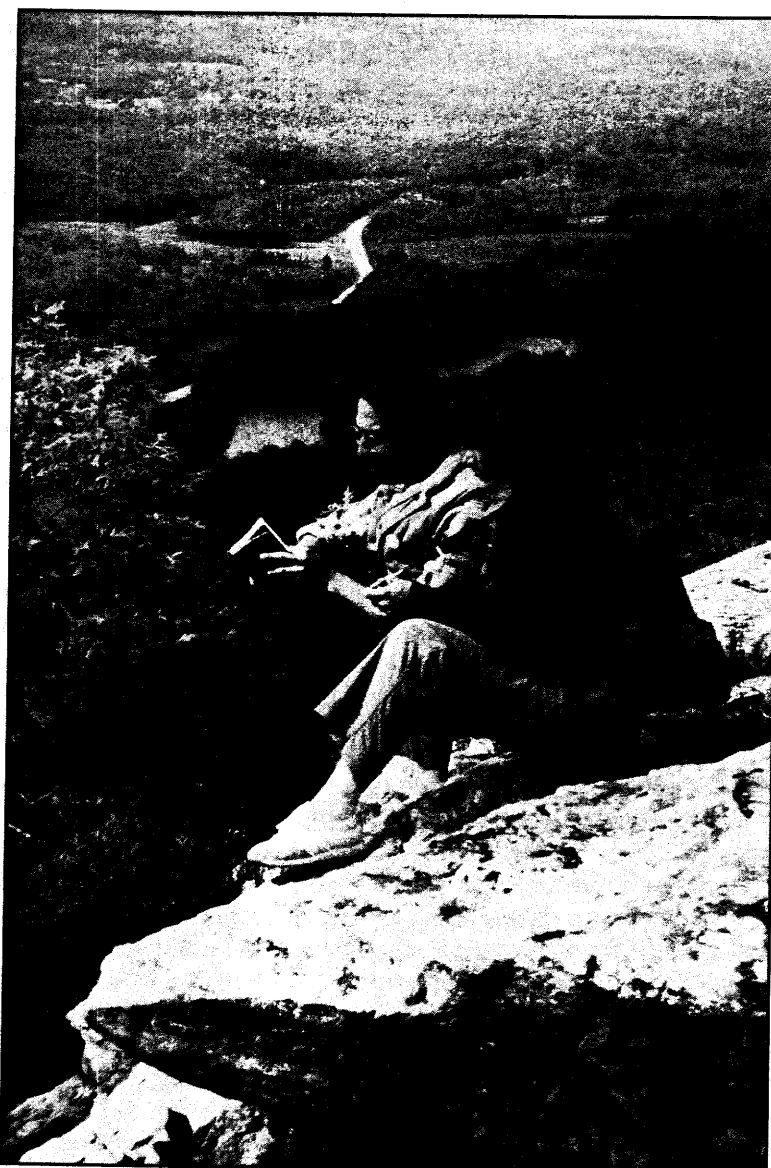
Early empirical work on motivations focused on (a) describing recreation experience preferences in various activities, (b) identifying different types of experiences enjoyed by different recreationists engaging in the same activity, (c) establishing a relationship among setting and activity preferences, (d) identifying a relationship between non-leisure conditions and recreation experience preferences, (e) exploring the relationship between experience preferences and subject characteristics, and (f) methodological development of the REP scales (Manfredo, Driver, & Tarrant, 1996).

Recent Research on Motivations for Outdoor Recreation

More recent work examining experience preferences has focused on (a) testing the REP scales, and (b) examining experience preferences by activity, setting, and group type.

Testing the REP scales

Some researchers have questioned the validity of the experience preference scales. For example, Williams, Schreyer, and Knopf (1990) found that the extent to which specific experience items correlated with each other (therefore defining a particular experience preference domain) differed depending on the past experience of the user. To address questions regarding such validity, Manfredo et al. (1996) conducted a meta-analysis of the structure of the REP scales. These researchers examined the results of 36 different studies that had applied the REP scales during the middle to late 1970s. Analyses supported the *a priori* domain and scale structures of the recreation experiences (Table IX.1).



The kind of outdoor recreation experience people seek often depends upon the type of setting in which the activity takes place. Photo courtesy of the Appalachian Trail Conference. Photo by Theodore C. Viars.

Table IX.1: List of Recreation Experience Preference Domains and Scales

Domains	Scales	Domains	Scales
Achievement/ Stimulation	1. reinforcing self-image 2. social recognition 3. skill development 4. competence testing 5. excitement 6. endurance 7. telling others	Enjoy Nature	1. scenery 2. general nature experience
Autonomy/ Leadership	1. independence 2. autonomy 3. control-power	Introspection	1. spiritual 2. introspection
Risk Taking ¹	1. risk taking	Creativity ¹	1. creativity
Equipment ¹	1. equipment	Nostalgia ¹	1. nostalgia
Family Togetherness ¹	1. family togetherness	Physical Fitness ¹	1. physical fitness
Similar People	1. being with friends 2. being with similar people	Physical Rest ¹	1. physical rest
New People	1. meeting new people 2. observing other people	Escape Personal-Social Pressures	1. tension release 2. slow down mentally 3. escape role overloads
Learning	1. general learning 2. exploration 3. geography study 4. learn more about nature	Escape Physical Pressure	1. tranquility 2. privacy 3. escape crowds 4. escape physical stressors
		Social Security ¹	1. social security
		Teaching-Leading Others	1. teaching-sharing skills 2. leading others
		Risk reduction	1. risk moderation 2. risk avoidance

Items on the left represent experience preference domains while numbered items represent experience preference scales. Individual items for each scale may be found in Manfredi, Driver, and Tarrant (1996).
¹ One-scale domains.

Manfredi et al. (1996) identified three desirable uses of the validated scales: (a) to determine why people took a particular trip, (b) to determine why people engage in a particular activity, and (c) to measure the satisfaction obtained from a particular trip or activity. Differences in researcher objectives may be illustrated by differences in response scales used. Furthermore, Manfredi et al. (1996) suggested that identifying a link between attained recreation experiences and broader beneficial human consequences, such as positive mental and physical health, would be an important use of the scales in future research.

Given the potential importance of identifying experience preferences that outdoor recreationists desire, research in the past decade has attempted to identify just what those preferences are in various situations. This work led to attempts to identify experience preferences across different outdoor settings and activities.

Experience preferences across settings

Attempts have been made to identify consistency in experience preferences across settings. Much of this research has examined whether desired experiences were consistent with the chosen setting, focusing primarily on settings defined by the Recreation Opportunity Spectrum. The most notable trend in findings is that such consistency does exist to some extent, but that the relationship between experience preferences and setting can be complex. For example, Floyd and Gramann (1997) found that four hunter types (categorized

based on experiences desired) systematically differed on setting characteristics such as desired accessibility, amount of regimentation, preferred use density, desired presence of nonrecreational uses, and preferred site management. However, Virden and Knopf (1989) found that four-wheelers, hikers, anglers, and campers all held experience preferences that depended somewhat on the setting they were participating in, but these preferences were (a) very different for each activity, and (b) did not include all the important preferences held by participants. That is, only some of the preferences required a particular setting. Similar evidence for such a nonlinear relationship between setting and experience preferences was found by Yuan and McEwen (1989) and Heywood, Christensen, and Stankey (1991).

Experience preferences within activities

Further complicating attempts to describe outdoor recreationists' motivations for participation is the recognition that many different experience preferences exist for different people participating in the same activity. Factors that influence desired experience preferences fall into four distinct categories: (1) *general differences in experiences desired*, (2) *type of trip taken*, (3) *characteristics of the participants*, and (4) *outcome of the trip*.

First, for outdoor recreation activities, several distinct groups of users can be identified based on *general differences in experiences desired*. Floyd and Gramann (1997) identified four types of hunters, based on experience preferences: outdoor enthusiasts, high-challenge harvesters, low-challenge harvesters, and non-harvesters. Similarly, Manfredo, Bright, and Stephenson (1991) identified four types of wildlife viewers (positivists, creativity-focused, generalists, and occasionalists) based on various levels of preferred experiences, related activities engaged in, activities combined with wildlife viewing, preferred wildlife, and constraints to taking trips to view wildlife. Similar categorizations have been constructed for hunters (Hazel, Langenau, & Levine, 1990) and anglers (Zwick, Glass, & More, 1993).

Second, experience preferences may differ by the *type of trip taken*. For example, Ewert (1993, mountaineering) found that people who went on guided or commercial trips valued adventure and excitement most highly, while those on private trips were more likely to prefer a quiet or escape experience.

Third, *characteristics of the participants* appear to influence preferences for experiences from a given activity. For example, the *age* of the participants has been found to influence experience preferences. For example, Decker and Connelly (1989) found that deer hunters under 30 years of age were the most likely group to prefer "achievement," or success experiences, those between 30 and 44 years of age preferred "appreciative," or nature enjoyment experiences, while those over 45 years old preferred "affiliative," or social experiences. In addition, experience preferences may differ across levels of *experience* of the participants. For example, Ewert (1993) found that advanced, intermediate, and beginning climbers preferred different experiences from climbing Mount McKinley in Denali National Park, Alaska. Decker and Connelly (1989, deer hunters) and Williams, Schreyer, and Knopf (1990, river floaters) also found differences in experience preferences across experience levels. Related to experience levels, the level of *specialization* has also been found to influence experience preferences desired by outdoor recreationists (Ewert & Hollenhorst, 1994, whitewater rafters and rock climbers; Fisher, 1997, anglers; McFarlane, 1994, birdwatching). Other participant characteristics that influence experience preferences are *ethnicity and acculturation*. For example, Carr and Williams (1993) found that Anglos and Hispanics with longer generational tenure and high acculturation scores in the U.S. were more likely to visit national forests to (a) be with friends, (b) escape from the city, and (c) respect the forest than less acculturated Hispanics.

Fourth, the *outcome of the trip* has been found to influence reported experience preferences. Both Ewert (1993, mountaineers) and Stewart (1992, hikers) found that success in achieving certain experience preferences influenced the subsequent report of the importance of those experiences.

Identifying consistent user preferences for an activity probably is not possible, but the benefit to managers is understanding what factors influence experience preferences and how these factors differ across recreation user types and groups. Identification of users across several experience dimensions allows for a deeper understanding of the socio-cultural meanings behind activities and, on a practical level, provides market segmentation advantages for managers who desire to attract or communicate with certain types of recreation users. The attention to motivations in research over the past several decades is related to a significant amount of research in related areas that directly or indirectly address the extent to which motivations or desired experiences are satisfied. These areas include user preferences and expectations while on-site and evaluations of the extent to which these preferences and expectations are met.

Attitudes Toward Recreation Encounters

The importance of research focusing on experience preferences, or motivations, lies in the extent to which outdoor recreationists are satisfied with their experience, that is, the extent to which experience preferences are fulfilled. Originally, attempts at measuring such satisfaction resulted in a general measure of "user satisfaction." Often, the recreationists were simply asked if they were satisfied with their trip. However, the general inability of such a global measure to differentiate between levels of experience fulfillment has resulted in attempts to gain a more specific understanding of the attitudes and perceptions of outdoor recreationists. Studies have examined perceptions of a variety of social and ecological impacts. Here we will focus on attitudes or evaluations of encounters with other individuals or groups while recreating, which is perceived crowding.

Perceived Crowding in Outdoor Recreation

Much of the research on perceived crowding arose from early attempts to determine social carrying capacities for outdoor recreation settings. Social carrying capacity has been defined as "the level of use beyond which social impacts exceed acceptable levels specified by evaluative standards" (Shelby & Heberlein, 1986), where one of those evaluative standards might address the number of people encountered. Early research on carrying capacity attempted to identify factors that might influence perceived crowding, including density and use levels (Hammit, McDonald, & Noe, 1984), encounter preferences (Ditton, Fedler, & Graefe, 1983), tolerance norms (Stankey, 1973), and experience expectations (Gramann, 1982). More recently, research on social carrying capacity has focused on establishing specific evaluative standards for satisfactory levels of use.

Recent Trends in Perceived Crowding

There is evidence that the tolerance of meeting other groups or individuals while participating in outdoor recreation is changing in this country. However, the direction of that tolerance is unclear given the mixed results across different areas. For example, in a longitudinal study of visitor use at three Wilderness Areas, Cole, Watson, and Roggenbuck (1995) examined changes in evaluations of encounters with several types of groups in each Wilderness area. While the level of interparty contacts in the Boundary Waters Canoe Area Wilderness had changed little between 1969 and 1991, twice as many 1991 respondents felt crowded as in 1969. Tolerance for paddle canoe, motor canoe, and motorboat groups also decreased from 1969 to 1991. Contrasting results were found for the Shining Rock Wilderness (1978 vs. 1990) and Desolation Wilderness (1972 vs. 1990), where tolerance for a specific encounter level was higher for more recent visitors. The ambiguity of these results illustrates the need to examine factors that may influence perceived crowding. Research of the last decade has identified such factors that can be classified as situational and personal.

Situational Factors Affecting Perceived Crowding

Several situational factors influence the extent to which individuals feel crowded in an outdoor recreation setting. While these factors may interact, they will be identified separately here. These factors include the *number of encounters*, the *location of the encounter*, the *type of group encountered*, and the *type of activity engaged*.

The Number of Encounters

A fundamental assumption of the social interference model is that use levels are a key factor in determining the number of encounters, which in turn influence perceived crowding (Tarrant, Cordell, & Kibler, 1997). Although self-reports of the levels of encounters generally provide lower estimates than more objective measures of encounters, perceived crowding appears to be best explained by an individual's perception of a situation in terms of encounter levels. In a review of crowding research, Graefe, Vaske, and Kuss (1984) found that more than three-fourths of the studies examining the relationship between use levels and perceived crowding reported a positive, yet only moderate, correlation between these factors. The number of perceived encounters, on the other hand, showed a significantly higher correlation with perceived crowding than use level. Other researchers have continued to identify situations that support the ability of encounters to predict crowding over use levels (Shelby, Vaske, & Heberlein, 1989; Stewart, Chen, & Cole, 1996; Tarrant, et al., 1997).

The Location of the Encounter

In addition to the actual number of encounters, the extent to which individuals experience crowding also depends on where the encounter took place. In studies of backcountry use, Stankey (1973) found that encounters had a greater negative effect on user's experiences in the interior of a Wilderness than in the periphery. Since then, several studies have continued to support these findings in a number of different settings, including

put-in and take-outs versus campsites for boating experiences (Ditton, Fedler, & Graefe, 1983; Hammitt, Shafer, & Bixler, 1992; Freeman, Tarrant, & Cordell, 1996; Tarrant, et al., 1997), trailheads versus trails (Patterson & Hammitt, 1990), and en-route to versus actual visit to a historical park (Anderek & Becker, 1993).

The Type of Group Encountered

The type of group encountered also influences perceived crowding. For example, encountering one large party in an outdoor area has been found to result in greater perceived crowding than meeting several smaller parties separately (Manning, 1985a; Tarrant, et al., 1997), for experienced users encountering inexperienced users (Ditton, et al., 1983), and for specialists encountering generalists (Hammitt, et al., 1984). An explanation for this influence is that when a group is perceived to have different values and goals than one's own party, perceived crowding increases and factors such as method of travel and group size are the most visible signs of assessing the similarity of that group to one's own (Graefe, et al., 1984).

The Type of Activity

Finally, the type of activity one is engaged in influences the level of crowding an outdoor recreationist feels. For example, canoeists were found to experience crowding more when encountering motorboaters than other canoers (Schreyer & Roggenbuck, 1978). However, the type of activity most likely interacts with one of the previously discussed factors that influence perceived crowding. For instance, perceived crowding of boaters and backcountry users has differed between campsite and trail (Ditton, et al., 1983; Patterson & Hammitt, 1990), and differences between kayakers and canoers were found across put-ins versus rapids (Tarrant, et al., 1997). In addition, there have been differences in perceived crowding identified across groups such as innertubers, anglers, and hunters (Shelby & Heberlein, 1986). More global descriptions of activities may provide generalizable information about the effects of activity on perceptions of crowding. For example, outdoor recreationists participating in activities considered as specialized (activities that require more development in skills and equipment) are likely to perceive crowding differently in given situations than those in nonspecialized activities (Hammitt, et al., 1984).

Personal Factors Affecting Perceived Crowding

An important and often-studied personal factor that influences an individual's perceived crowding is the perception or evaluation of the number of contacts with other individuals or groups while recreating in the outdoors. Often referred to as a normative approach to perceived crowding, several writers have suggested that norms are strongly related to experience parameters such as perceived crowding and satisfaction (Graefe, Vaske, & Kuss, 1984; Manning, 1985a; Vaske, Shelby, Graefe, & Heberlein, 1986). Research attempting to connect an individual's reported norms for encounter levels to satisfaction has been somewhat mixed. For example, Patterson and Hammitt (1990) and Tarrant et al., (1997) found low correlations between the extent to which an individual's actual encounters exceeded reported tolerances and decreased satisfaction with the trip. Similarly, Williams, Roggenbuck, and Bange (1991) found significant correlations only in extreme discrepancies between tolerance for and actual encounters. On the other hand, a substantial amount of research has found high correlations between norms for tolerable contacts and evaluations of an outdoor recreation experience (Hammitt & Rutlin, 1995; Lewis, Lime, & Anderson, 1996; Manning, Johnson, & Van de Kamp, 1996; Manning, Lime, Friemund, & Pitt, 1996; Vaske, Donnelly, & Petrucci, 1996). Research on norms for encounter levels has most generally addressed two key questions: (1) Who can identify norms for encounter levels? (2) For what activities and settings are norms for encounter levels highest or lowest?

Who Can Identify Encounter Norms?

Although many indicate that the level of contacts is important to their satisfaction, not all outdoor recreationists are capable of identifying specific levels of tolerable contacts with other individuals or groups. For example, Hall and Shelby (1996) indicated that fewer than one-half were able to give a specific number of tolerable contacts, and Tarrant et al. (1997) found that no more than one-fourth could give a number. In what circumstances are individuals capable of accurately identifying the number of contacts with other individuals or groups before the quality of their experience diminishes?

One factor that has been examined is the *type of activity*. Overall, studies that explore the existence of norms across activities support the notion that recreationists who participate in different activities show different levels of tolerance for encounters. This result has been found for a variety of activities including hunting and boating (Heberlein & Vaske, 1977; Roggenbuck, Williams, Bange, & Dean, 1991). Closer inspection of these findings, however, suggests that the relationship between activity and ability to report tolerable levels of encounters is more complex.

The most common factor that influences the ability of outdoor recreationists to identify tolerable encounter levels is the *type of setting* in which the activity is to take place. That is, individuals who are recreating in a low density setting are more able to identify a certain level of contacts with others than those participating in a high density, or high use, area. This result has been found for a variety of activities, including hikers (Hall & Shelby, 1996; Patterson & Hammitt, 1990), whitewater boaters (Roggenbuck, Williams, Bange, & Dean, 1991; Tarrant, et al., 1997), canoeists (Heberlein & Vaske, 1977; Lewis, Lime, & Anderson, 1996; Shelby & Stein, 1984), and anglers (Martinson & Shelby, 1992; Shelby, 1981; Shelby & Stein, 1984). Other factors that influence the ability to provide a level of tolerable contacts are the *experience and/or knowledge levels of the recreationists* (positive correlation, Basman, Manfredo, Barro, Vaske, & Watson, 1996; Hall & Shelby, 1996), the *size of the group* (negative correlation, Hall & Shelby, 1996), and the *level of specialization* (negative correlation, Tarrant, et al., 1997).

For What Activities and Settings Are Norms for Encounter Levels Highest or Lowest?

Research has explored the ability of recreationists to identify encounter norms for various types of boaters (Manning, et al., 1996; Shelby & Heberlein, 1986; Tarrant, et al., 1997; Vaske, Donnelly, Freimund, & Miller, 1995), hunters and anglers (Heberlein & Vaske, 1977; Shelby, 1981). Typically, tolerance for encounters depends on the nature of the recreationist encountered. In general, the more "obtrusive" a recreation activity is (e.g., motorboats versus kayaks), the lower the tolerance for encountering people or groups engaging in that activity. However, this effect depends to some extent on the nature of the recreationist encountering the "obtrusive" activity. As would be expected, as the desired setting moves from low density to high density, the levels of encounters that an individual can tolerate increases for boaters (Lewis, Lime, & Anderson, 1996; Martinson & Shelby, 1992; Shelby, 1981), hikers (Hammit & Rutlin, 1995; Patterson & Hammit, 1990), and others (Vaske, Donnelly, & Petrucci, 1996).

Summary

Motivations and Experience Preferences

At least four general conclusions may be drawn from work identifying the experiences that the public prefers when recreating on public land:

(1) While it is evident that different resources, or settings, can provide varying experiences, recent research suggests that the relationship between desired experiences and specific settings may be more complex than outdoor recreation management models often assume. Common sense might suggest that a primitive, backcountry setting provides better opportunities for solitude and getting back to nature than an area with developed trails and facilities. In reality, public recreation users often differ in (a) the types of setting that will give them a particular experience and (b) their definition of what, precisely, a specific experience is. Solitude for one individual might mean seeing no one else for an entire day, while another individual may perceive an experience of solitude as seeing other parties but only at the campground, or trailhead. Others may define this experience as spending time with specific types of people (such as family or friends) rather than focusing on a number of people.

(2) The complex nonlinear nature of experience preferences not only applies to various settings but also to activities. Desired experiences form complex interactions with a number of characteristics, such as the size and composition of the group, type of trip, and experience level. In addition, the desire for multiple types of experiences, or satisfactions, within a single activity has resulted in the identification of user types based on many criteria. Notwithstanding the ability of statistical techniques to identify a limited number of experience factors, the number of groups that can be identified on the basis of experience preferences is limited primarily by the number of experience preferences that are thrown into the analysis. This result underscores the complex nature of motivations for specific experiences.

(3) Identifying experience preferences across settings and activities ignores the fluid nature of desired experiences in a given setting and activity. As an individual enjoys a specific setting by engaging in an equally specific activity, experience preferences may shift as a result of other changes in the immediate environment, such as success in achieving desired experiences or interactions with other users.

(4) The appropriate use of existing experience preference scales continues to attract research. While domains of existing scales appear to be relatively stable, research on specific activities has found that the factor structures may, in fact, depend on the activity, setting, or user group being studied. Furthermore, the ever-evolving nature of outdoor recreation in America suggests that research addressing the complex nature of desired experiences will continue to be relevant for quite some time.

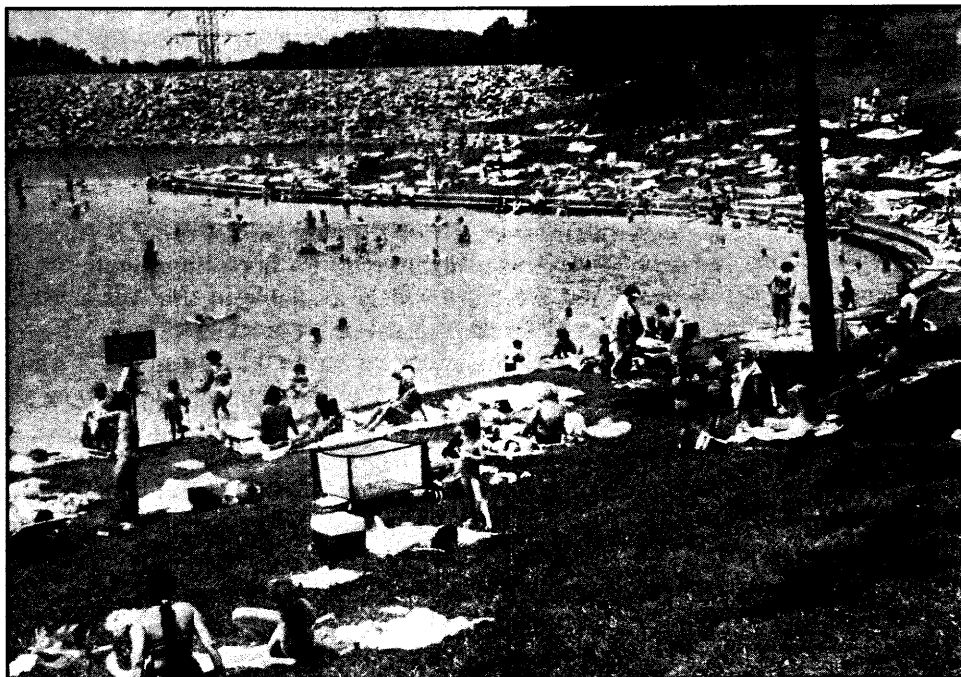
Overall, the focus on motivations is an attempt to understand why people value opportunities to participate in outdoor recreation. According to Schreyer (1986), outdoor recreation behavior is directed toward the attainment of an outcome ultimately to satisfy various needs. It is simply a subset of all human behavior. Needs filled in outdoor recreation are tied to "the broader sphere of needs which people seek to fulfill in everyday life". Several implications exist for policymakers and administrators. As input to policy discussions, identifying the needs of people in outdoor settings allows us to understand what the most important unmet needs are in society as a whole. These needs vary with values, culture, and physical abilities. Identifying unmet needs may also clarify government's role in the provision of public social services as well as the role of the private sector. Also, given that much of the public land in this country is managed for multiple resource uses, a better understanding of outdoor recreation needs improves public land planning and decision making. Finally, identifying salient motives for recreating in the outdoors contributes to improved understanding of the ultimate value of outdoor recreation to society. This contribution is one reason why research into long-term benefits of outdoor recreation is growing.

Understanding the nature of motivations for outdoor recreation participation is important in the planning, inventory, and provision of opportunities for recreation. Americans expect diverse experiences in outdoor recreation settings because motivations vary among people, settings, and times. Such motivations relate strongly to the attitudes, preferences, and expectations that ultimately drive the satisfaction people get from recreation.

Attitudes Toward Recreation Encounters

Several conclusions may be drawn about attitudes toward encountering other recreationists. First, while it appears that recreationists are generally able to identify norms for encounters, this ability is influenced by factors such as the type of activity, the amount of experience the individual brings to a recreation activity, the type of group encountered, the nature of the recreation trip, and the setting in which the activity takes place. Furthermore, the ability to identify a norm is positively related to concern about other types of impacts. Given that many recreationists can identify norms for appropriate encounters, different levels of tolerance exist depending on the activity engaged in and the activity with which one comes into contact.

Research on normative standards has identified several managerial benefits from using attitudinal information in decision making. First, in identifying what experiences and preferences are most desirable for a particular site, such as opportunities for a wilderness experience, normative information can focus management actions on satisfying preferences. Second, understanding user preferences helps identify the most important characteristics of settings. Third, identifying acceptable impacts helps to define standards and target management. Targets can be quantifiable measures, such as "three or fewer contacts with other parties in a four-hour period." Fourth, attitudinal information can identify minimal and optimal conditions for experiences at different times, providing flexibility for seasonal and climatic changes. Fifth, the



Visitor perceptions of overcrowding at recreation areas are subjective estimates relating to visitor expectations of the recreation place. Boone Dam Reservation. Photo courtesy of the Tennessee Valley Authority.

intensity of people's attitudes toward on-site conditions can help managers identify the most important impacts to address. Finally, attitudinal information can provide managers with a sense of how much agreement there is among the public about on-site conditions. Attitudinal findings have been applied in management frameworks such as Limits of Acceptable Change (LAC), Recreation Opportunity Spectrum (ROS), Visitor Impact Management (VIM), Carrying Capacity Assessment Process (C-CAP), Quality Upgrading and Learning (QUAL), and Visitor Experience and Resource Protection (VERP).

Implications

An understanding of recreationists' motivations for and attitudes about recreation experiences is essential to improving management of public outdoor recreation. A primary goal of recreation management is to provide a diversity of recreation experiences. To do so, managers need information about what those experiences are and what user perceptions influence the quality of their experiences. Managers also need information about the nature of future recreation use in order to determine needs for funding, staffing, and facilities. Future recreation demand can be projected by gathering information about experiences people desire. Finally, studies of motivations and experiences identify things managers do not know about existing and new user groups. For example, the traditional user of outdoor recreation areas has been white and middle class. Minorities have generally been underrepresented in resource-based, nonurban outdoor activities. In addition, some activities and experiences are culturally more popular with one racial group than another (Cordell, et al., 1990). As the U.S. population becomes increasingly diverse due to immigration and high birth rates among minority populations, there will be significant effects on the way outdoor recreation managers approach their responsibilities.

RECREATION VISITOR PREFERENCES FOR AND PERCEPTIONS OF OUTDOOR RECREATION SETTING ATTRIBUTES

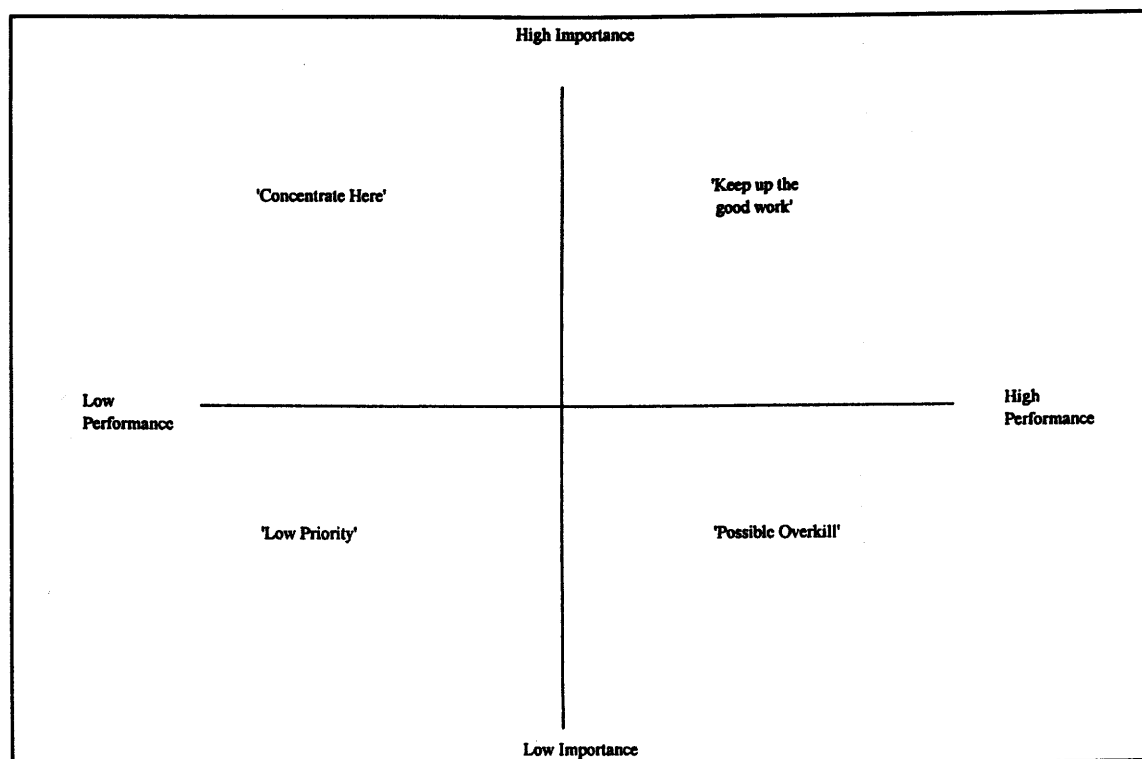
(By Michael A. Tarrant and Erin Smith, University of Georgia, and H. Ken Cordell, USDA Forest Service, Athens, GA)

Between 1990 and 1994, a comprehensive national survey was conducted by the USDA Forest Service (FS), Southern Research Station, to measure visitor preferences for, and perceptions of, setting attributes at a variety of outdoor recreation sites. Over 11,000 visitors at 31 outdoor recreation sites across the country were interviewed in this study. The study was entitled CUSTOMER, which is an acronym for Customer Use and Survey Techniques for Operations, Management, Evaluations, and Research. Sites included those managed by the FS, the Bureau of Land Management (BLM), and the Tennessee Valley Authority (TVA). This section presents results of analysis of CUSTOMER data on visitor preferences for, and satisfaction with, site attributes corresponding to five specific recreation settings (developed, dispersed, water, roaded, and winter) and one general outdoor setting.

Developed areas were the most evenly distributed (across the U.S.) of the five specific settings sampled and includes sites and services such as campgrounds, RV hook-ups, picnic sites, and roads. Dispersed settings are primarily roadless areas and are more widely available in the Western than in the Eastern U.S. Water settings include lakes, rivers, and streams that are either near or adjacent to roads as well as intensively developed water sites. Roaded recreation areas are within 0.5 mile of roads, and most uses are trail dependent (for example, walking, biking, and horse riding). Winter settings provide snow and ice-based recreation opportunities and are more widely distributed in the West.

Each interviewed visitor responded to a list of 15-24 specific attributes of the setting in which he or she was recreating (e.g., visitors to a winter setting completed the list of winter setting attributes). In addition, all visitors completed a list of 14 general attributes common to all outdoor recreation settings, such as clear signs to the area, reasonable fees, and safety and security on site. Respondents reported (1) their preferences (on a scale of 1, "not important," to 5, "extremely important") and (2) their perceptions (on a scale of 1, "terrible," to 5, "delighted") for each of the settings. Visitors were contacted on-site and asked to complete a mail-back survey, which measured their preferences and satisfactions with the setting attributes.

Figure IX.1: Importance-Performance Framework (Martilla & James, 1977)



The CUSTOMER data were analyzed using the importance-performance method, in which the satisfaction scale was considered analogous to a performance criterion. The importance-performance framework is derived from the marketing literature, especially works in market segmentation (Martilla & James, 1977), and provides an effective procedure for evaluating customer satisfaction with products or services comprised of multiple attributes. Display of analysis results uses a 4-quadrant grid (Figure IX.1). Attributes in the “keep up the good work” quadrant are ones that the visitor considers to be important and satisfactory. “Possible overkill” items are those that perform well, but are not rated as important by visitors. Resources may be wasted on increased management of the attributes in this quadrant. The “low priority” items are those that receive low performance and importance ratings. The “concentrate here” quadrant represents attributes with low perceived performance, but high importance. The “concentrate here” quadrant contains the attributes that may be of greatest concern to outdoor recreation managers because their poor performance is most likely to reduce visitor satisfaction.

Purpose and Objectives

This section provides an overview to visitor satisfactions with, and preferences for, attributes of specific and general outdoor recreation settings using an importance-performance framework. Three objectives were addressed:

1. Determine specific setting attributes that outdoor recreation managers should target, i.e., the “concentrate here” quadrant of the importance-performance framework.
2. Determine the effect of visitor demographic characteristics on their importance and performance ratings.
3. Determine the effect of trip characteristics on visitor importance and performance.

Demographic Characteristics

Socio-demographic variables have traditionally explained some of the variance in outdoor recreation participation (Manning, 1985a). White, able-bodied, well-educated, and middle-income individuals comprise the "typical" participant (Cordell, Bergstrom, Hartmann, & English, 1990). Communities with proportionately higher black and low-income residents have fewer opportunities for dispersed and winter recreation. Communities with a higher percentage of whites have lower participation in developed land and water recreation. Males and higher-income individuals are associated with the most recreation opportunities of all groups. Disabled populations participate less per capita than any other social group (Cordell, et al., 1990). Clearly, as the U.S. population becomes more ethnically, socially, and economically diverse, recreation managers will have to modify the attributes of many outdoor settings to accommodate new demands.

The following demographic variables were used in objective two and categorized into dichotomous groups: gender (male versus female), education (<16 years versus 16+ years); disability (disabled versus non-disabled), race (white versus non-white), and employment (full-time or part-time employment versus unemployed).

Trip Characteristics

As society becomes more urbanized, travel patterns (including length of stay, repeated visitation, and distance traveled) will be increasingly dependent upon the quality of the recreation opportunities and settings provided. Urban residents typically have fewer recreation opportunities than rural dwellers, culminating in increased pressures on, and demand for, recreation opportunities closer to metropolitan areas. The following trip characteristics (used to address objective three) were categorized into dichotomous groups: number of previous visits to site (first-time versus return visits), distance traveled from primary residence (<30 miles versus 30 or more miles),² length of stay (day versus overnight visitors), and day of visit (weekday versus weekend). A final trip characteristic, origin of visitor, was grouped into the four assessment regions (See Figure II.1, Chapter II.).

General Setting

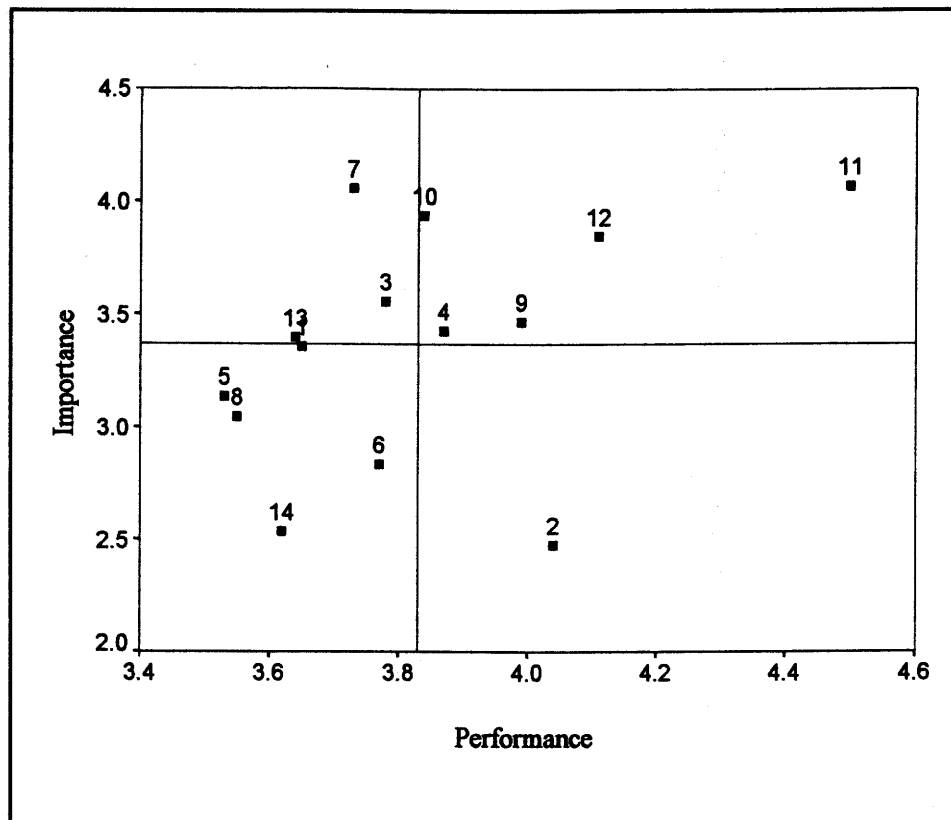
Objective One: Attributes Requiring Management Attention

Figure IX.2 shows that three of the 14 general setting attributes fell into the "concentrate here" quadrant for the general setting: cleanliness of restrooms, facilities and grounds (7), clear directional signs (3), and maps, informational signs and bulletin boards (13).³ These factors represent attributes where managers should direct most of their attention because they are likely to reduce visitor satisfaction. Only one attribute fell in the "possible overkill" quadrant: location of area, it is near to my home (2). Items that fell in the "keep up the good work" quadrant were quality of the scenery (11), reasonable fees (12), helpfulness of employees (9), good roads and parking (4), and safety and security (10). Attributes within the "low priority" quadrant were access to supplies and shopping (14), information and programs about the area history (8), barrier-free access for disabled visitors (5), presence of a ranger (6), and information for planning a trip to the area (1).

²In states east of the Mississippi River, *local* was defined as 30 miles or less traveled from primary residence. In states west of the Mississippi, *local* was defined as <50 miles.

³Item numbers in Figure IX.2 match the order in which the attributes are listed in the corresponding tables (TATs IX.1-IX.8). For example, item two in Figure IX.2 (which falls into the "possible overkill" quadrant) is the second attribute (location of area, it is near to my home) listed in TATs IX.1-IX.8.

Figure IX.2: Importance-Performance of General Settings



Objective Two: Effect of Demographic Characteristics on Attribute Ratings

With the exception of disabled visitors, importance-performance charts for all demographic groups were very similar. The same three attributes found in objective one (cleanliness of facilities, clear directional signs, maps, and information) appeared in the "concentrate here" quadrant for gender (males and females), education (<16 versus 16+ years), race (white and non-white), employment (employed versus unemployed), and nondisabled visitors. For disabled visitors, managers should address barrier-free access and cleanliness of facilities.

In the remainder of this chapter, referenced tables (herein abbreviated to TAT—Technical Appendix Table)⁴ may be seen by requesting a copy from the USDA Forest Service. The Tables IX.1-8 show differences in performance and importance scores for the different demographic groups. Generally, females rated setting attributes as more important than males (TAT IX.1), especially clear directional signs, cleanliness of facilities, safety and security, and barrier-free access. Females also rated performance on seven of the 14 attributes higher than males (TAT IX.2), especially location of the area, safety and security, and presence of a ranger. Interestingly, the differences between the two groups on performance ratings (TAT IX.2) were not as highly significant as for importance ratings (TAT IX.1).

Eight of the 14 attributes were rated more important by less (than highly) educated visitors (especially access to supplies, barrier-free access, and good roads and parking), two are rated more important by highly (versus less) educated visitors (quality of the scenery and planning information) and four have no significant difference (TAT IX.1). Fewer differences occurred for performance ratings: six attributes were rated higher for highly (versus less) educated visitors (especially quality of the scenery and reasonable fees) (TAT IX.2). Less (versus highly) educated visitors rated safety and security lower.

⁴These technical appendices are available upon request to USDA Forest Service, Outdoor Recreation and Wilderness Assessment Group, 320 Green Street, Athens, GA 30603-2044.

Attributes falling in the "concentrate here" quadrant differed by disability. For disabled visitors, managers should address barrier-free access and cleanliness of facilities. For nondisabled visitors, the same three attributes identified in objective one occurred (i.e., cleanliness of facilities, clear directional signs, maps, and information). Disabled visitors rated seven of the 14 attributes as more important than nondisabled visitors, especially barrier-free access, ranger presence, and access to supplies (TAT IX.1) and rated one attribute as performing lower (barrier-free access) (TAT IX.2). No other significant differences were found. Access to supplies and barrier-free access were rated as more important by non-whites than whites (TAT IX.3). Only one attribute (information for planning a trip) was rated as performing significantly differently for whites than non-whites (TAT IX.4).

Nine of the 14 attributes were rated as significantly more important by employed versus unemployed visitors (TAT IX.3), the most highly significant were good roads and parking, ranger presence, and barrier-free access. Employed visitors rated one attribute (scenic quality) as more important than unemployed visitors. Seven attributes were rated in better condition by unemployed visitors, especially maps and signs, information about the area's history, and helpfulness of employees (TAT IX.4). Employed visitors rated one attribute (scenic quality) higher.

Objective Three: Effect of Trip Characteristics on Attribute Ratings

The same three attributes identified in objective one also occurred in the "concentrate here" quadrant for length of stay (overnight and day), day of visit (weekday versus weekend), origin (Pacific Coast, Rocky Mountain, South, and North), and non-locals. Four attributes fell in the "concentrate here" quadrant for first-time visitors (information for planning a trip, clear directional signs, cleanliness of facilities, and maps and information signs) and two attributes for return visitors (cleanliness of facilities and safety and security). For locals, there were only two attributes (cleanliness of facilities and safety and security).

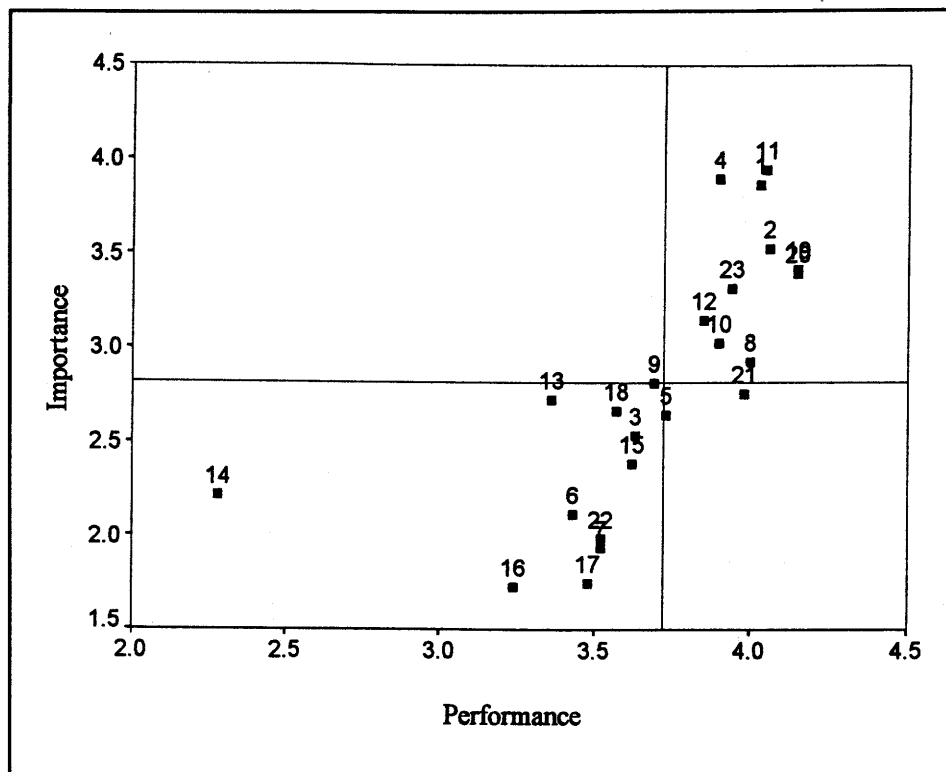
As expected, return visitors rated location of the area as more important than first-time visitors. First-time visitors, however, rated six of the 14 attributes as more important than return visitors (especially, information for planning a trip, maps and information signs, information about an area's history, and clear directional signs) (TAT IX.3). TAT IX.4 shows that, overall, first-time visitors rated the setting in better condition than return visitors, especially helpfulness of employees, reasonable fees, safety and security, and cleanliness of facilities.

Local visitors rated location of the area, good roads and parking, and barrier-free access as most important, while non-locals rated information for planning a trip and information about the area's history as more important (TAT IX.5). For 12 of the 14 attributes, non-local visitors rated the condition of the setting higher than local visitors (TAT IX.6), especially cleanliness of facilities, safety and security, helpfulness of employees, and information (maps and history). As expected, location of the area was highest for locals.

Day users rated seven of the 14 attributes as more important than overnight users (TAT IX.6), especially location of the area, good roads and parking, information (maps and history), barrier-free access, and clear directional signs. Day visitors also rated the condition of the setting better than did overnight visitors on three attributes, especially location of the area. They rate conditions significantly worse than overnight visitors on four attributes (TAT IX.6).

Only two attributes have significant differences for importance ratings (TAT IX.5). Weekend visitors rated location of the area and scenic quality as more important than weekday visitors. Generally, weekday visitors (TAT IX.6) gave higher performance ratings. Overall, visitors from the Pacific Coast and Rocky Mountain regions rated the attributes least important, while visitors from the South and North gave the highest importance ratings (TAT IX.7). This trend was particularly evident for the following attributes: ranger presence, access to supplies, safety and security, location of the area, information (maps and history), clear directional signs, information for planning a trip, good roads and access, and cleanliness of facilities. A similar trend as for importance ratings was found for condition ratings. Southern visitors rated general recreation settings in better condition than (in the following general order) Northern, Pacific Coast, and Rocky Mountain visitors (TAT IX.8). The most pronounced differences occurred for the following attributes: information (maps and history), cleanliness of facilities, helpfulness of employees, good roads and parking, and location of area.

Figure IX.3: Importance-Performance of Developed Settings



Developed Setting

Objective One: Attributes Requiring Management Attention

The importance-performance chart for the developed setting (Figure IX.3) shows that none of the 23 attributes fell in the "concentrate here" quadrant and only two items [cabin and campsite reservations (5), and cooking grills available (21)] occurred in the "possible overkill" zone. These results suggest that visitors are generally satisfied with setting conditions.⁵ Attributes falling in the "keep up the good work" quadrant are associated with the most basic services and facilities provided at a developed recreation setting [e.g., drinking water available (11), an uncrowded and quiet setting (1), fire rings available (20), picnic tables available (19), adequate parking spaces (2), clean, well-maintained facilities (4), well maintained trails (23), flush toilets (10), lighting (12), and campsite access (8)]. Items in the "low priority" zone included more supplemental services and facilities such as electrical hook-ups (14), RV dump stations (15), laundry facilities (16), recreation equipment rentals (17), hot showers (13), group shelters (7), food stores (3), educational programs (6), playground (22), telephones (18), and firewood (9).

Objective Two: Effect of Demographic Characteristics on Attribute Ratings

No attributes were in the "concentrate here" quadrant for gender (males and females), employment status (employed and unemployed), and for visitors who were nondisabled, <16 years education, and white. However, the following attributes did occur in the "concentrate here" quadrant for disabled visitors (availability of hot showers), 16+ years education (availability of firewood), and non-whites (availability of telephones).

Females rated most developed setting attributes as significantly more important than did males (TAT IX.9), especially parking, clean facilities, and availability of group shelters and picnic tables. However, there were negligible differences between males and females on performance ratings (TAT IX.10). Visitors with <16 years of education rated most developed setting attributes as significantly more important than visitors with 16+ years education (TAT IX.9), especially RV sewage dumps, electrical hook-ups, nearby store for food and supplies, and availability of hot showers. Only one attribute was rated more important by highly (versus less)

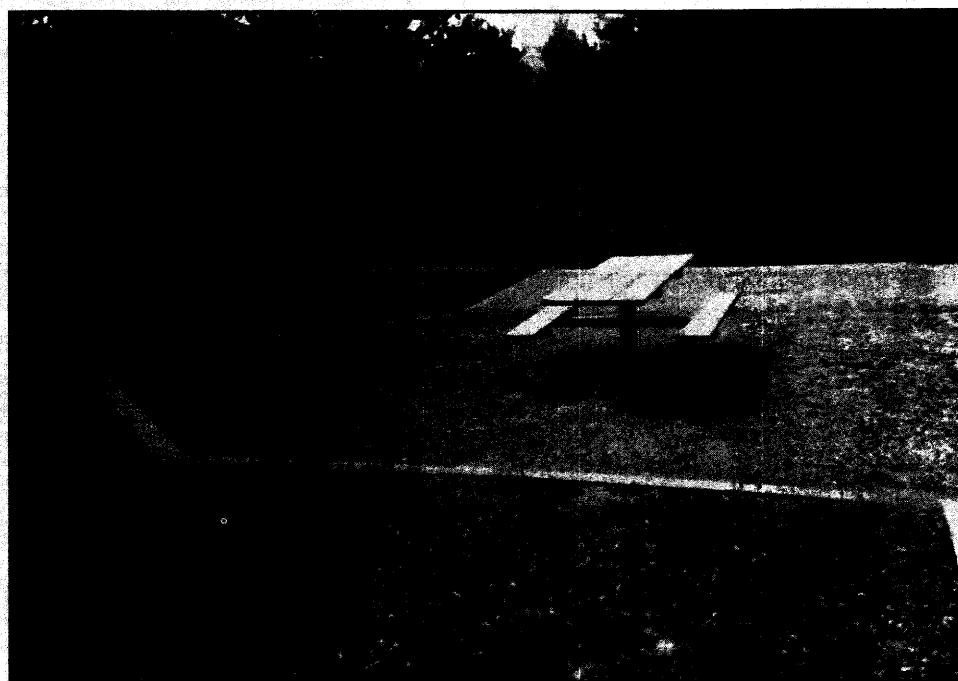
⁵Item numbers in Figure IX.3 match the order in which the attributes are listed in the corresponding tables (TATs IX.9-IX.16).

educated visitors: an uncrowded and quiet setting. There were negligible differences between high versus low education groups on performance ratings (TAT IX.10).

Few differences existed in mean importance or performance scores for disabled versus nondisabled visitors (TAT IX.9 and IX.10). One reason may be the relatively low sample size for disabled users (ranging from $n = 50$ to 68). Bathroom facilities (flush toilets and lighting) were more important to disabled than nondisabled visitors (TAT IX.9), but it was the condition of campsite facilities (availability of picnic tables, fire rings, firewood, and campsite access) that disabled visitors rated significantly lower than visitors without a disability (TAT IX.10).

Generally, non-whites prefer more supplemental services (e.g., recreation equipment rentals, telephones, cooking grills, and playground/sports fields) than whites (TAT IX.11). There were no differences in performance scores for whites versus non-whites (TAT IX.12). Again, one reason for the lack of statistical significance may be the relatively low sample size for non-whites.

Attributes related to RV camping (e.g., gravel/paved camping access, electrical hook-ups, RV sewage dump stations, and laundry facilities) were rated as more important for employed versus unemployed visitors (TAT IX.11). This difference may reflect the higher proportion of retired visitors who drive RVs. There were no significant differences between the two groups on performance ratings (TAT IX.12).



Developed recreation areas provide picnic areas and other facilities such as running water and electric hookups.

Objective Three: Effect of Trip Characteristics on Attribute Ratings

No attributes were in the "concentrate here" quadrant for day of the week (weekend versus weekday users) or for nonlocals, day users, and first-time visitors. However, the following attributes did occur in the "concentrate here" quadrant for locals, overnight, Southern and Northern visitors (availability of hot showers), return, overnight, and Rocky Mountain visitors (availability of firewood), local users (area and restroom lighting), and Pacific Coast visitors (well-maintained trails).

Few differences existed in mean importance (TAT IX.11) or performance scores (TAT IX.12) for first-time versus return visitors. First-time visitors rated educational and laundry facilities as more important, while return visitors rated campsite features (availability of fire rings, picnic tables, and cooking grills) as more important (TAT IX.11).

As expected, overnight visitors rated attributes associated with longer stays (e.g., availability of fire rings, firewood, hot showers, drinking water, and sewage dump stations) as more important, while day users rated trails and educational programs as more important (TAT IX.13). Overnight (versus day) users (TAT IX.14) also rated performance for long-stay attributes lower (e.g., availability of picnic tables, fire grills, drinking water, and flush toilets).

No significant differences in importance scores (TAT IX.13) and few significant differences in performance ratings (TAT IX.14) were found for weekday versus weekend users. Setting attributes related to use

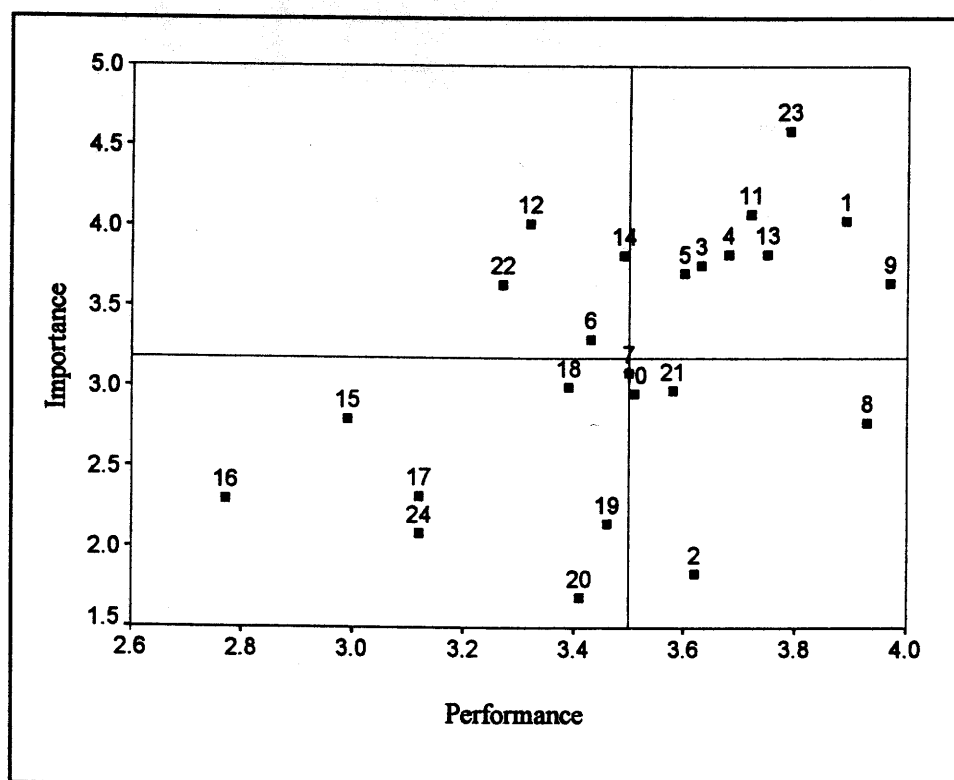
levels (e.g., an uncrowded and quiet setting, adequate parking spaces, and cabin/campsite reservations) were rated higher in performance for weekday versus weekend visitors (TAT IX.14).

Local visitors were more concerned with short-stay attributes (e.g., availability of picnic tables and grills, and group shelters), while nonlocals exhibited a greater preference for long-stay attributes (e.g., availability of educational programs, hot showers, and laundry facilities) (TAT IX.13). Nonlocals tended to rate the performance of many (nine of 23) attributes more highly than locals, especially availability of drinking water, area and bathroom lighting, RV sewage stations, and an uncrowded and quiet setting (TAT IX.14).

Generally, visitors from the West (Pacific Coast and Rocky Mountain Regions) rated developed setting attributes as least important and eastern (North and South) visitors rated the attributes as most important (TAT IX.15). Attributes of most importance to eastern visitors focused on visitor comfort and convenience and included availability of hot showers, bathroom lighting, flush toilets, playground/sports facilities, recreation equipment rentals, and nearby stores.

While there are fewer significant differences between the groups on perceived condition of the settings, performance ratings were generally highest from eastern than western visitors (TAT IX.16). Differences were particularly apparent for the following attributes: availability of flush toilets, lighting, firewood, and telephones, RV sewage dump stations, uncrowded/quiet setting, adequate parking, and proximity of stores.

Figure IX.4: Importance-Performance of Water Settings



Water Setting

Objective One: Attributes Requiring Management Attention

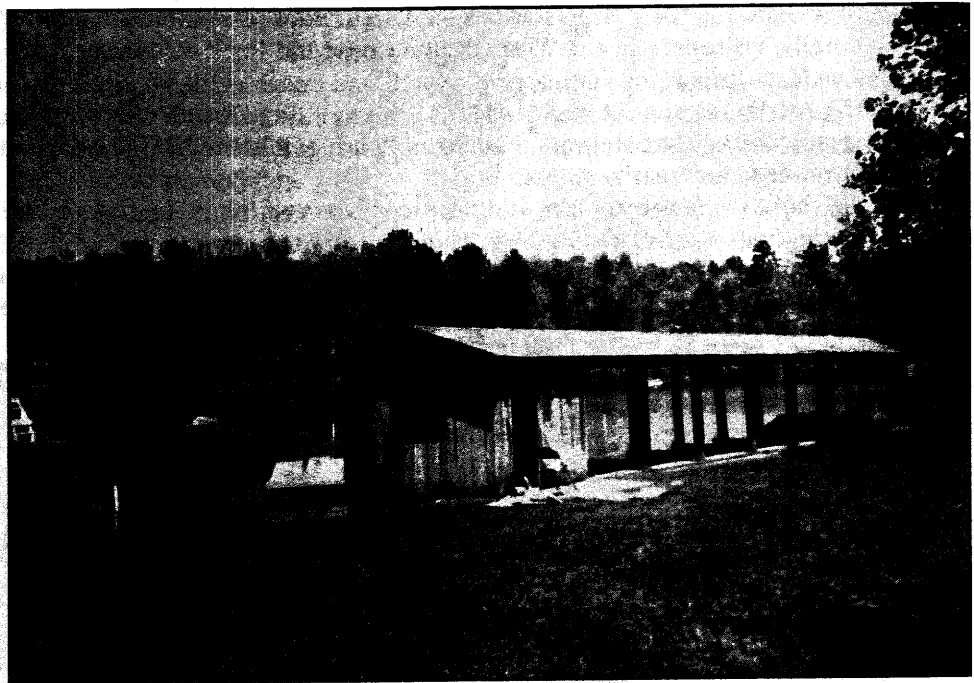
The importance-performance chart for the water setting (Figure IX.4) shows that four of the 24 attributes fell in the "concentrate here" quadrant: take-out/beaching spots (6), information on hazards and conditions (12), restrooms (14), and stable water levels (22).⁶ Attributes falling in the "possible overkill" zone were activity-based (challenging rapids (2), waterskiing in the area (8), designated swimming area and beach (21), and boat-in camping opportunities (10). "Keep up the good work" attributes were associated with natural-

⁶Item numbers in Figure IX.4 match the order in which the attributes are listed in the corresponding tables (TATs IX.17-IX.24).

ness of conditions: clean, unpolluted water (23), safe drinking water (11), hazard-free water (1), fishing opportunities (9), uncrowded conditions (3), adequate road access (13), adequate and secure parking (4), and boat ramps/launching facilities (5). "Low priority" attributes were related to services and amenities on-site (fuel services (7), fish cleaning stations (16), showers (15), mechanic services (17), docking facilities (18), equipment rentals (19), commercial outfitters (20), and fishing piers (24).

Objective Two: Effect of Demographic Characteristics on Attribute Ratings

All demographic groups in the "concentrate here" zone identified many of the same attributes. Males, those with fewer than 16 years education, nondisabled, non-white, and employed visitors identified the same attributes listed in objective one (take-out/beaching spots, information on conditions and hazards, restrooms, stable water levels). Visitors who were female, 16+ years education, and unemployed listed two attributes (information on hazards and stable water levels), white



Water recreation includes boating, swimming, and fishing activities.

visitors listed take-outs and restrooms, and disabled visitors did not identify any attributes falling in the "concentrate here" zone. Females rated most attributes more important than males (TAT IX.17), especially those concerned with safety (e.g., designated swimming area, hazard-free water, safe drinking water, and information on hazards). Males rated only one attribute more importantly (fishing opportunities). In contrast, males and females rated performance of the setting similarly, with only a few exceptions (TAT IX.18).

In general, visitors with <16 years education rated most water setting attributes more importantly than those with 16+ years education (TAT IX.17), especially attributes related to fishing (e.g., fishing opportunities, fish-cleaning stations, fishing piers). Visitors with 16+ years education rated only one attribute more important (uncrowded conditions). Again, performance ratings were more closely aligned between the two groups (TAT IX.18). Few significant differences were found for importance (TAT IX.17) and performance (TAT IX.18) ratings between visitors with and without a disability. No significant differences between white and non-white visitors were found for importance (TAT IX.19) and performance (TAT IX.20) ratings. Few significant differences between employed and unemployed visitors were found for importance (TAT IX.19) ratings. Unemployed visitors generally rated the setting in poorer condition than employed visitors did (TAT IX.20).

Objective Three: Effect of Trip Characteristics on Attribute Ratings

Again, there was much overlap in the type of attributes in the "concentrate here" zone by trip characteristics. First-time, previous, local, and nonlocal visitors as well as weekend users identified the same attributes listed in objective one (take-out/beaching spots, information on conditions and hazards, restrooms, and stable water levels). Attributes listed in the "concentrate here" quadrant were information on hazards, restrooms, and stable water levels for day users and visitors from the Rocky Mountain Region; take-out/beaching spots, information on hazards and stable water levels for overnight, weekday, and Pacific Coast visitors; information on hazards and restrooms for Southern visitors; and boat ramps and information on hazards for Northern visitors.

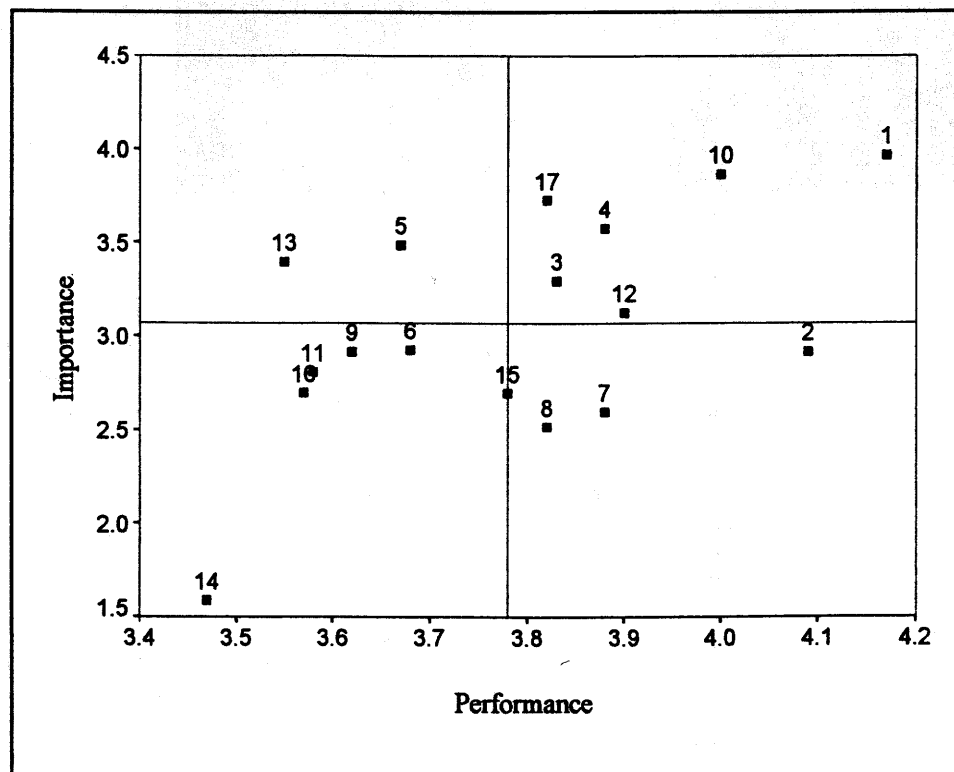
First-time visitors rated support services (equipment rental and commercial outfitters) more importantly than return visitors did, while return visitors rated stable water levels and boat ramps as more important (TAT IX.19). First-time visitors consistently rated performance of the water setting attributes higher than return visitors did (especially uncrowded conditions, adequate and secure parking, and stable water levels).

Importance ratings for local and non-local visitors were somewhat similar (TAT IX.21). Locals rated swimming areas and fishing piers more important, while nonlocals rated uncrowded conditions and challenging rapids as more important. In contrast, performance ratings for the two groups differed considerably: nonlocals consistently rated the setting attributes higher than locals did (TAT IX.22).

Overnight visitors attached greater importance to water setting attributes (especially supplies, shower facilities, and mechanic services) than did day users (TAT IX.21). They also rated actual conditions higher than day users, especially safe drinking water, equipment rentals, restrooms, and uncrowded conditions (TAT IX.22). No significant differences occurred between weekday and weekend visitors on importance ratings (TAT IX.21). A few significant differences were seen for performance ratings, with weekday visitors giving higher scores for parking, road conditions, and equipment and supplies than weekend visitors (TAT IX.22).

In comparison with other outdoor recreation settings, there were fewer differences in importance ratings for water attributes by origin of visitors. Once again, however, visitors from the East gave consistently higher importance scores than visitors from the West (TAT IX.23). While the highest performance ratings were typically given by Northern visitors and the lowest by Rocky Mountain visitors (similar to other recreation settings), Pacific Coast visitors generally rated water conditions better than Southern visitors (in contrast to other recreation settings) (TAT IX.24).

Figure IX.5: Importance-Performance of Dispersed Settings



Dispersed Setting

Objective One: Attributes Requiring Management Attention

The importance-performance chart for the dispersed setting (Figure IX.5) shows that only two of the 17 attributes fell within the "concentrate here" quadrant (safe drinking water (5) and information on conditions and hazards (13)). Three items (physically challenging environment (2), designated campsites (7), and motorized access (8)) were in the "possible overkill" zone, suggesting visitors were satisfied with some, but not all, setting conditions.⁷ Attributes falling in the "keep up the good work" quadrant were associated with naturalness (an undisturbed and natural setting (1) and presence and evidence of wildlife (10)) and travel facilities (absence of motorized vehicles (4), well-maintained trails (12), separation of motorized and nonmotorized

⁷Item numbers in Figure IX.5 match the order in which the attributes are listed in the corresponding tables (TATs IX.25-IX.32).

uses (17), and adequate and secure parking (3)). "Low priority" attributes included supplementary services (commercial outfitters and guide services (14), primitive toilet facilities (16), connecting or loop trails (15), information and access to historic sites (11), directional signs (9), and see/hear others (6)).



Most dispersed recreation areas exist in a natural, unfettered state.

Objective Two: Effect of Demographic Characteristics on Attribute Ratings

Two attributes (safe drinking water and information on conditions and hazards) were located in the "concentrate here" quadrant for education (<16 years and 16+ years) and employment (employed versus unemployed) groups as well as for male, non-disabled and white visitors. However, additional attributes occurred in the "concentrate here" quadrant for females (adequate and secure parking). For disabled and non-white visitors, the following attributes only fell in the "concentrate here" quadrant: safe drinking water, information on conditions and hazards, and separation of motorized and non-motorized uses.

Females consistently rated dispersed setting attributes as more important than did males, especially the need for well-maintained trails, information on conditions and hazards, and safe drinking water (TAT IX.25). Males gave a higher importance rating than females for only one attribute (the presence of a physically challenging environment). While there were fewer differences by gender for performance ratings (TAT IX.26), women generally gave higher ratings for the attributes to which they gave high importance scores (i.e., safe drinking water and well-maintained trails) as well as natural conditions (e.g., an undisturbed natural setting and presence of wildlife). Visitors with <16 years education exhibited greater importance for items related to a more developed camping experience, such as motorized access, safe drinking water, primitive toilet facilities, and designated campsites (TAT IX.25). In contrast, visitors with 16+ years education rated items associated with solitude and naturalness as more important (e.g., undisturbed natural setting, absence of motorized vehicles, see/hear others, presence of wildlife). Higher-educated visitors generally rated the actual setting in better condition than less educated visitors (TAT IX.26).

No significant differences in importance ratings were found between visitors with and without a disability (TAT IX.25), but, disabled visitors typically rated the performance of the dispersed setting much lower than visitors without a disability (TAT IX.26). No significant differences between whites and non-whites were observed for either the importance or performance ratings (Technical Appendix Tables IX.27 and IX.28).

Attributes associated with naturalness (undisturbed natural setting, physically challenging environment, see/hear others, and presence of wildlife) were rated as more important by employed than by unemployed visitors (TAT IX.27). Unemployed visitors were more concerned with safety issues (adequate and secure parking and safe drinking water). Employed and unemployed visitors did not significantly differ on performance ratings of the dispersed setting (TAT IX.28).

Objective Three: Effect of Trip Characteristics on Attribute Ratings

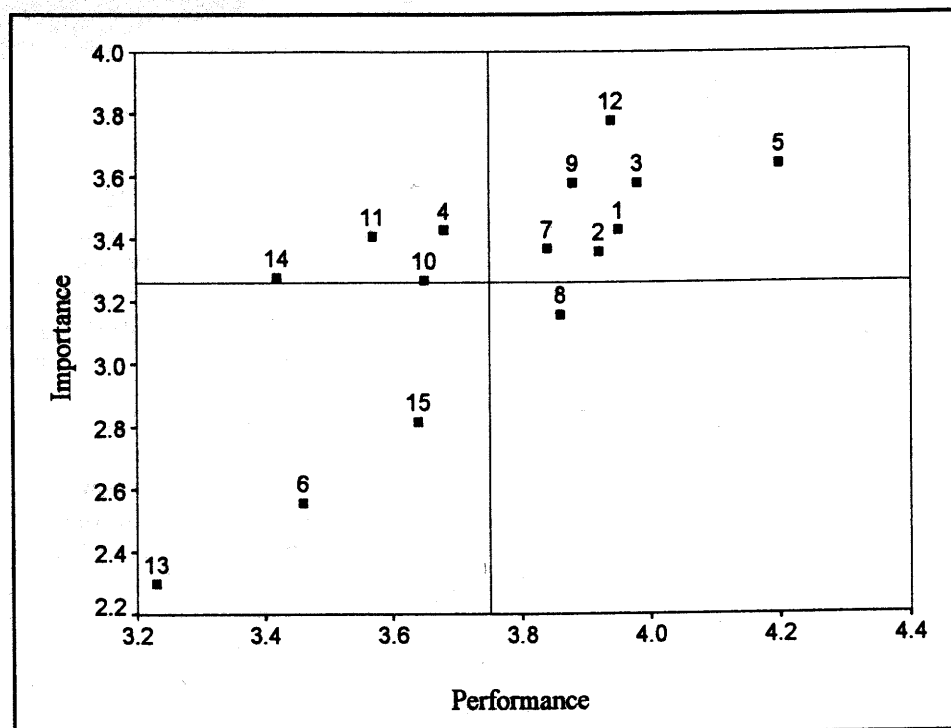
Two attributes (safe drinking water and information on conditions and hazards) were in the "concentrate here" quadrant for both first-time and return visitors, for both locals and nonlocals, for weekend and weekday users, and for day-use, Rocky Mountain, and Southern visitors. An additional attribute occurred in the "concentrate here" quadrant for overnight and Pacific Coast visitors (separation of motorized and nonmotorized uses). For Northern visitors, attributes in the "concentrate here" quadrant were adequate for secure parking, information on conditions and hazards, and separation of motorized and nonmotorized uses.

First-time visitors rated attributes about information (on conditions and hazards, historic sites, and directional signs) and safety (safe drinking water and well-maintained trails) as more important, while return visitors rated opportunities for a physically challenging environment and motorized access as more important (TAT IX.27). Generally, return visitors rated the setting's performance higher than did first-time visitors (TAT IX.28).

Local visitors also rated attributes about information (on conditions and hazards, historic sites, and directional signs) as more important than did nonlocals (TAT IX.29), but they generally rated the setting in worse condition than nonlocals did (TAT IX.30). Day visitors placed greater importance on information (about hazards and conditions, historic sites, and directional signs) and management services (well-maintained trails, commercial outfitters, and toilet facilities) (TAT IX.29). Overnight visitors exhibited stronger preference for naturalness (physically challenging environment, see/hear others, and presence of wildlife). There were relatively few differences between day and overnight visitors on performance ratings (TAT IX.30). No significant differences were found between weekday and weekend visitors on either importance (TAT IX.29) or performance ratings (TAT IX.30).

The highest mean importance scores were given (in the following descending order) by Southern, Northern, Pacific Coast, and Rocky Mountain visitors (TAT IX.31). Generally, there were similarities in importance ratings for visitors from the East and West. Visitors from the Pacific Coast and Rocky Mountain regions reported similar scores, and Southern and Northern visitors exhibited similar scores. A similar trend was observed for performance ratings: Northern and Southern visitors typically reported higher perceived condition scores than Western visitors.

Figure IX.6: Importance-Performance of Roaded Settings



Roaded Setting

Objective One: Attributes Requiring Management Attention

In the importance-performance chart for the roaded setting (Figure IX.6), four of the 15 attributes fell in the "concentrate here" quadrant (convenient restrooms (4), interpretive signs (10), information about historic sites (11), availability of drinking water (14)), while only one item (roaded access (8)) was in the "possible overkill" zone.⁸ Attributes in the "keep up the good work" quadrant were associated with scenic quality and access (distant views (5), scenic overlooks (3), wildlife viewing (12), absence of human modification to landscape (1), uncongested traffic (9), good all-weather roads (2), and walking trails (7)). "Low priority" items were picnic facilities (15), passing lanes (6), and bicycle lanes (13).

Well-built and maintained roads wind through the national forests and national parks.



Objective Two: Effect of Demographic Characteristics on Attribute Ratings

The same four attributes as in objective one (convenient restrooms, interpretive signs, information about historic sites, and availability of drinking water) fell in the "concentrate here" quadrant for gender (males and females), education (<16 years and 16+ years), race (whites and non-whites), and employment (employed versus unemployed) groups. These same attributes occurred for visitors without a disability (with the exception of drinking water availability) and for disabled users (except that opportunities for viewing wildlife replaced interpretive signs).

Females consistently rated roaded attributes as more important than did males, especially convenient restrooms, interpretive signs, drinking water, and good all-weather roads (TAT IX.33). There were no significant differences between the two groups on performance ratings (TAT IX.34). Visitors with <16 years education rated attributes related to roadside conveniences as more important (good all-weather roads, passing lanes, picnic facilities, convenient restrooms, and drinking water) (TAT IX.33). There were no significant differences between the two education groups on performance ratings (TAT IX.34).

Disabled visitors consistently assigned greater importance for attributes related to roadside conveniences (good all-weather roads, scenic overlooks, passing lanes, and picnic facilities) than visitors without a disability (TAT IX.33). Again, there were no significant differences between the two groups on performance ratings (TAT IX.34). There were no significant differences between whites and non-whites on importance (TAT IX.35) and

⁸Item numbers in Figure IX.6 match the order in which the attributes are listed in the corresponding tables (TATs IX.33-IX.40).

performance ratings (TAT IX.36). Few significant differences between employed and unemployed visitors were found on importance (TAT IX.35) and performance ratings (TAT IX.36). However, unemployed visitors did rate roadside conveniences (good all-weather roads, passing lanes, and convenient restrooms) as more important than did employed visitors (TAT IX.35).

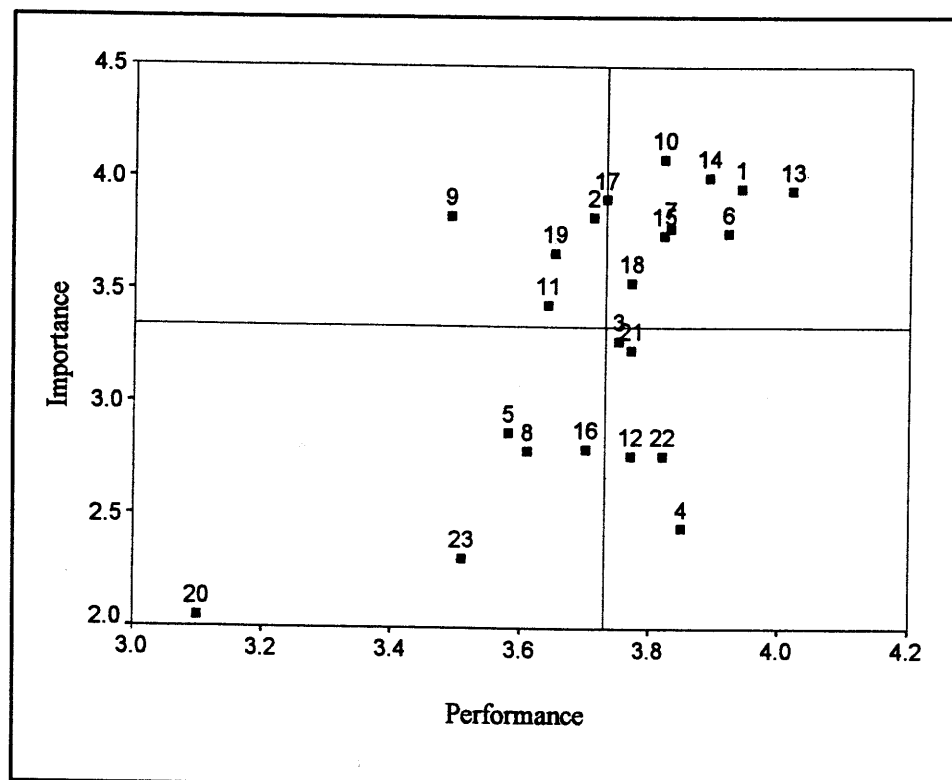
Objective Three: Effect of Trip Characteristics on Attribute Ratings

The same four attributes as in objective one (convenient restrooms, interpretive signs, information about historic sites, and availability of drinking water) fell in the "concentrate here" quadrant for both first-time and return, day and overnight, and weekday and weekend visitors, as well as for nonlocals and visitors from the Rocky Mountain, North, and South regions. Local visitors identified convenient restrooms and drinking water, while Pacific Coast visitors only placed information about historic sites in the "concentrate here" zone.

Generally, first-time visitors rated roaded setting attributes as being of greater importance than did return visitors, especially interpretive signs, scenic overlooks, and good all-weather roads (TAT IX.35). There were few significant differences between the two groups in performance ratings (TAT IX.36). There were very few significant differences between locals and nonlocals in importance (TAT IX.37) and performance ratings (TAT IX.38). Day users rated roadside conveniences (convenient restrooms, good all-weather roads, picnic facilities, passing lanes, and scenic overlooks) more important than did overnight users (TAT IX.37). Day visitors also tended to rate the performance of roaded attributes higher than overnight users (TAT IX.38). There were no significant differences between weekday and weekend visitors in importance (TAT IX.37) and performance ratings (TAT IX.38).

Mean importance ratings for roaded attributes by origin of visitor were given in the following descending order: South, North, Rocky Mountain, and Pacific Coast. The greatest differences were for good all-weather roads, convenient restrooms, availability of drinking water, and picnic sites (TAT IX.39). Relatively few significant differences were found for performance ratings, but the ratings were typically lowest from the Rocky Mountain region and highest from Northern visitors (TAT IX.40).

Figure IX.7: Importance-Performance of Winter Settings



Winter Setting

Objective One: Attributes Requiring Management Attention

In the importance-performance chart for the winter setting (Figure IX.7), four of the 23 attributes fell in the "concentrate here" quadrant (information on conditions and hazards (9), restrooms (19), presence of wildlife (11), and adequate parking (2)). Five items (equipment rental (4), lighted trails (22), instruction staff (12), presence of rangers (21), and warming facilities (3)) were in the "possible overkill" zone, suggesting that managers should attend to almost 40% of the winter setting attributes.⁹ Attributes falling in the "keep up the good work" quadrant were associated with management of use levels (variety of challenging trails (13), uncrowded areas (1), short wait for lifts (14), avalanche control (6), plowed/maintained roads (10), trail grooming (7), emergency rescue (15), absence of development (18), and separation of motorized/nonmotorized uses (17)). "Low priority" items were restaurants/groceries (5) and lodging nearby (8), evening activities (23), campgrounds with electricity (20), and snowmaking capabilities (16).



Winter recreation opportunities are more plentiful in the North and Rocky Mountain regions than in other parts of the country.

Objective Two: Effect of Demographic Characteristics on Attribute Ratings

Relative to other settings, there was tremendous variation in the attributes falling in the "concentrate here" zone by demographic characteristics. Variables of concern to all groups of visitors were information on conditions/hazards and public restrooms. Additional attributes in the "concentrate here" quadrant included separation of motorized and non-motorized use (for employed and unemployed, females, and users with and without disabilities), presence of wildlife (males and females, <16 and 16+ years education, unemployed, white, and users without disabilities), and adequate parking (females, users without disabilities, unemployed, <16 years education, and white).

As with other settings, females placed greater importance on safety (avalanche control) and convenience (restrooms) than males (TAT IX.41). No other significant differences occurred between the two groups. Performance ratings were also very similar for males and females (TAT IX.42). There were no significant differences between visitors with <16 years and 16+ years education for importance (TAT IX.41) and performance (TAT IX.42) ratings. There were no significant differences between visitors with and without a disability on importance (TAT IX.41) and performance (TAT IX.42) ratings. There was only one significant difference between white and non-white visitors on importance scores (instruction staff) (TAT IX.43) and there were no significant differences on performance ratings (TAT IX.44). There were no significant differences between employed and unemployed visitors for importance (TAT IX.43) and performance (TAT IX.44) ratings.

⁹ Item numbers in Figure IX.7 match the order in which the attributes are listed in the corresponding tables (TATs IX.41-IX.46).

Objective Three: Effect of Trip Characteristics on Attribute Ratings

Again, there was large variation in the type and number of attributes in the "concentrate here" zone by trip characteristics. Variables of concern for most groups included presence of wildlife, information on hazards/conditions, and public restrooms. For locals, day, weekend and weekday, and Pacific Coast visitors, adequate parking and separation of mechanized and non-mechanized uses were additional concerns. (Because of the relatively small sample sizes for visitors from the Rocky Mountain ($n = 8$ to 30), Southern ($n = 2$ to 9), and Northern ($n = 4$ to 10) regions, only Pacific Coast visitors ($n = 180$ to 324) will be reviewed here.) Attributes in the "concentrate here" zone for first-time visitors were uncrowded areas, instruction staff, and lighted trails. For return visitors they were warming facilities, equipment rental, instruction staff, snow-making facilities, presence of rangers, and lighted trails. There was only one significant difference between first-time and return visitors on importance scores (absence of development) (TAT IX.43) and on performance ratings (variety of challenge) (TAT IX.44). Local visitors placed greater importance on support services and facilities (lighted slopes, warming facilities, snowmaking equipment, emergency rescue, avalanche control, and instruction staff) (TAT IX.45), and rated parking conditions worse (TAT IX.46) than nonlocals.

There was only one significant difference between day and overnight visitors on importance scores (overnight visitors rated the need for overnight lodging higher) (TAT IX.45). There were two significant differences in performance ratings (overnight visitors rated overnight lodging and plowed roads/parking in better condition) (TAT IX.44). Weekday visitors typically rated winter setting attributes as more important than did weekend visitors, especially emergency rescue, warming facilities, lighted trails, restrooms, and avalanche control (TAT IX.45). Fewer differences between the two groups were observed for performance ratings; weekday visitors (TAT IX.46) rated only avalanche control and public restrooms more highly.

Conclusions and Implications

There are at least seven major findings with implications for outdoor recreation management:

- (1) Relatively few (fewer than one-quarter) of all setting attributes occurred in the "concentrate here" quadrant. This finding indicates that, for the most part, visitors are generally satisfied with the way outdoor recreation settings are managed.
- (2) There are, however, some exceptions to the general finding above. Restroom facilities (clean bathrooms, availability of restrooms), safety (safe drinking water, stable water levels), and information (directional signs, information on conditions and hazards, and on-site interpretation) appeared in the "concentrate here" quadrant for all settings except developed, suggesting that these attributes warrant additional attention by outdoor recreation managers. Visitor needs for information and clean facilities (particularly restrooms) are consistent with previous studies, which have revealed that users are more concerned with basic managerial than physical conditions such as type and extent of vegetative erosion (Cordell, et al., 1990; Hendee, Stankey, & Lucas, 1990; Manning, 1985b). However, our findings extend this conclusion to include a visitor concern for more improved on-site communication and information, especially with regard to hazards and conditions at the setting. At a time when funding for on-site interpretation has decreased, it is interesting that visitor demand for this type of information remains high. If visitors are willing to pay for on-site interpretation as suggested by Cordell et al. (1990), our findings suggest the greatest information needs may be related to safety and setting conditions. In 1988, the Domestic Policy Council recognized the need for information on local area recreation that was not addressed by the tourism industry. Our results also support this conclusion.
- (3) Greater differences between groups (on demographic and trip characteristics) were found for attribute importance than performance (i.e., perceived ratings of setting conditions). This finding suggests that while visitor preferences may differ, setting conditions are perceived similarly by most groups of visitors.
- (4) Across most settings, females and visitors originating from eastern states rate attributes more important than do males and western visitors. Yet, their perceptions of setting conditions are quite similar. This finding implies that if managers wish to increase the number of setting attributes in the "keep up the good work" quadrant, they must recognize that certain groups of visitors (especially females and eastern visitors) place greater importance on many setting attributes than do other types of visitors. Previ-

ous research has shown contradictory findings with regard to the importance and performance of setting attributes for Wilderness areas. Roggenbuck, Williams and Watson (1993), for example, demonstrated that eastern and Western visitors place similar importance on various site indicators for Wilderness, while Tarrant and Shafer (in review) found considerable differences in visitor perceptions of, and preferences for, Wilderness setting attributes. Although our chapter examined a broad array of recreation (and not Wilderness) settings, the question of regional differences in visitor preferences and perceptions remains.

- (5) Visitors appear more satisfied with settings on the opposite ends of the Recreation Opportunity Spectrum (ROS) (i.e., developed and dispersed) than with settings nearer the middle of the spectrum (water, roaded, and winter).
- (6) For the most part, visitors from the South and North regions of the U.S. gave similar importance and performance ratings, as did visitors from the Pacific Coast and Rocky Mountain regions. Southern visitors consistently reported the highest importance and performance scores for setting attributes, while Pacific Coast visitors typically gave the lowest ratings.
- (7) One of the most striking findings was the similarity in demographic and travel groups. With the exception of two settings (winter and dispersed), there were very few differences between groups on the attributes rated in the "concentrate here" quadrant. For winter and dispersed settings, females were less satisfied with parking conditions than males. Disabled, overnight, and Pacific Coast visitors were all less satisfied with the separation of motorized and nonmotorized uses than nondisabled visitors, day-visitors, and visitors from other regions.

Potential differences in outdoor recreation users across the settings investigated here suggest the possibility that outdoor recreation settings might be managed to different standards in the East and West and for males and females. The issue of uniformity in standards has been raised for management of areas in the National Wilderness Preservation System (see for example, Higgins, 1990; Mitchell, 1990; Tarrant & Shafer, 1997). There also are implications for managing outdoor recreation areas using the ROS. ROS recognizes that a diverse array of recreation opportunities should be provided for the American public (Driver, Brown, Stankey, & Gregoire, 1987). ROS provides the basis for establishing minimum standards for setting conditions using a LAC (Limits of Acceptable Change) framework (Stankey, Cole, Lucas, Petersen, & Frissell, 1985). Our study provides an initial step toward determining minimum acceptable standards by (a) identifying indicators of setting conditions that managers should be concerned about (i.e., attributes that fall in the "concentrate here" quadrant) and (b) recognizing that standards may vary by visitor demographic and trip characteristics.

At least two notes of caution should be raised when interpreting the results of CUSTOMER: (1) Failure to find significant differences between racial and disabled groups may be a function of unequal and low sample sizes. Additional research using larger sample sizes for non-whites and for visitors with a disability is clearly necessary. (2) Statistical significance does not necessarily equate with managerial significance. The large sample sizes for many groups in our analysis suggest some of the differences between groups may be an artifact of the type of statistics we used and do not represent a substantial or "real-world" difference that managers should be concerned about. While there is some validity to this argument, it should be recognized that: (a) part of our analysis did not involve statistical inference (i.e., the use of an importance-performance framework), and (b) the magnitude of difference (as indicated by the size of the t-value) provides a good indicator of critical differences (e.g., a t-value of 4.0 has more questionable statistical significance than a t-value greater than 6.0 or 7.0).

Overall, managers of outdoor recreation settings should be somewhat concerned about the results of CUSTOMER presented here. Although most setting attributes fell outside the "concentrate here" quadrant, two of the most important attributes (visitor safety and information), along with cleanliness of facilities (especially restrooms), were consistently rated as highly important but in relatively poor condition. In the future, managers should give additional attention to water, roaded, and winter recreation settings, where the number of attributes in the "concentrate here" quadrant was considerably higher than in dispersed or developed outdoor recreation settings.

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